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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|---|---|---|---|---|
| 10/802,981 | 03/17/2004 | Darko Kirovski | MS1-1934US | 3895 |

22801 7590 04/09/2008

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| EXAMINER | |
|---|---|
| DEBNATH, SUMAN | |

| ART UNIT | PAPER NUMBER |
|---|---|
| 2135 | |

| MAIL DATE | DELIVERY MODE |
|---|---|
| 04/09/2008 | PAPER |

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

| Office Action Summary | Application No. | Applicant(s) | |
|---|---|---|---|
| | 10/802,981 | KIROVSKI, DARKO | |
| | Examiner | Art Unit | |
| | Suman Debnath | 2135 | |

*-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --*

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

1)☒ Responsive to communication(s) filed on *25 September 2007*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

4)☒ Claim(s) *1-15,17-22 and 24-32* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-15, 17-22 and 24-32* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

**Application Papers**

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/ are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

## DETAILED ACTION

1. Claims 1-15, 17-22 and 24-32 are pending in this application.

2. Claims 1-2, 15, 22, 28 and 30 are currently amended.

3. Claims 16 and 23 are cancelled.

4. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office Action.

### *Claim Rejections - 35 USC § 101*

5. 35 U.S.C. 101 reads as follows:

> Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

Claims 1, 15, 22 and 28 are rejected under 35 U.S.C 101 because claims are directed to non-statutory subject matter. Claim 1, 15, 22 and 28 are directed to creating "a label" which could be a piece of paper comprising object and encoded data. A piece of paper can not be considered as device, machine or manufacture to produce a real world results. Furthermore, steps to create a label could be considered as software which is also non tangible. The language of the claim(s) raises a question whether the Claim is directed merely to an abstract idea that is not tied to an environment or machine which would result in a practical operation producing a concrete, useful, and tangible result to form the basis of statutory subject-matter under 35 U.S.C. 101. (Warmerdam, 33 F.3d at 1360, 31 USPQ2d at 1759, 1760).

***Claim Rejections - 35 USC § 102***

6. Claims 1-12, 14-15, 17-22, 24-32 are rejected under 35 U.S.C. 102(b) as being anticipated by Kaish et al. (Patent Number: 5,974,150), hereinafter "Kaish".

7. As to claim 1, Kaish discloses a method comprising: determining randomly distributed features in an object (column 12, lines 1-32, "The fibers are randomly and non-deterministically embedded into or form a part of a substrate", see also column 9, lines 45-65, column 16, lines 27-45); determining a probability density function associated with the object (As defined by the Applicant, "the probability density function represents the likelihood that a unit of the randomly distributed attributes is found in a certain location of the authentication object. In the context of a fiber-based certificate of authenticity, the probability density function may represent the probability that a particular point in a region of the authentication object is illuminated" (Specification, page 12, lines 15-19); therefore, Applicant should note that Kaish teaches this concept by having "a location or particular characteristics of fibers, which are random or unique, are determined, and used to generate an encrypted code, wherein the encryption algorithm key is maintained in secrecy. Therefore, the code must match the dichroic fiber location or characteristics for authentication of the certificate." -e.g. column 12, lines 53-59, where fibers are the authentication objects that was randomly placed in a random location. See also column 12, lines 4-10, which describes that the fibers (i.e. authentication object) are randomly and non-deterministically embedded into or form a part of a subtrate; see also column 20, lines 48-55 and column 16, lines 27-37);

compressing data representing the randomly distributed features, wherein the compressing is based in part on the probability density function (Applicant should note that no particular type of compression method is claimed. Kaish discloses compressing of data which is later encoded and encrypted -e.g., column 28, lines 10-15. Furthermore, Kaish teaches compression by illuminating the fiber pattern by a special light -e.g., col. 27, lines 21-25); encoding the compressed data with a signature (abstract, column 9, lines 55-65, column 21, lines 35-47, column 11, lines 15-32); and creating a label that includes the object and the encoded data (column 16, lines 25-45, column 9, lines 10-45).

8. As to claim 28, it is rejected using the same rationale as for the rejection of claim 1.

9. As to claim 22, Kaish discloses a label comprising: an authentication object including randomly distributed features (column 12, lines 1-32); and encoded information associated with the authentication object (abstract, column 9, lines 55-65, column 21, lines 35-47, column 11, lines 15-32), the information being encoded with a signature and including compressed data representing the randomly distributed features in the authentication object (abstract, column 9, lines 55-65, column 21, lines 35-47, column 11, lines 15-32), wherein the data in the encoded information is compressed by: determining a probability density function associated with the authentication object (column 12, lines 53-59, column 15, lines 1-10, see also column 20, lines 48-55 and

column 16, lines 27-37); determining vectors associated with the randomly distributed attributes based, at least in part, on the probability density function (column 28, lines 10-15, also see claim 8, see also see also column 20, lines 48-55 and column 16, lines 27-37); and encoding the vectors using an arithmetic coding algorithm (column 16, lines 25-45, column 9, lines 10-45); wherein the label is self-authenticated by comparing the compressed data in the encoded information and the data representing the randomly distributed features obtained by analyzing the authentication object (column 27, lines 25-65 and column 28, lines 14-20).

10. As to claims 2 and 30, Kaish discloses wherein compressing the data additionally comprises: determining vectors associated with the randomly distributed features based, at least in part, on the probability density function (column 12, lines 1-12, column 18, lines 20-45); and encoding the vectors using an arithmetic coding algorithm (column 18, lines 20-45).

11. As to claim 15, it is rejected using the same rationale as for the rejection of claims 1 and 2.

12. As to claim 3, Kaish discloses wherein encoding the vectors using the arithmetic coding algorithm includes determining a path for connecting a portion of the vectors within a fixed amount of data (column 23, lines 4-17).

13. As to claims 4 and 29, Kaish discloses wherein the randomly distributed features are fibers that are randomly positioned in the object (column 12, lines 1-32, column 9, lines 45-65, column 16, lines 27-45).

14. As to claim 5, Kaish discloses wherein the probability density function represents a probability that fibers in the particular region are illuminated by a light source (column 12, lines 10-32, "the fiber pattern, which is completely random, is illuminated by a light..").

15. As to claim 6, Kaish discloses wherein the probability density function is derived based, at least in part, on the length of the fibers (abstract, column 15, lines 39-52).

16. As to claim 7, Kaish discloses wherein each vector represents the end points of two fibers (column 18, lines 35-45).

17. As to claim 8, 17 and 25, Kaish discloses wherein the data is encoded with a private key (column 11, lines 15-32).

18. As to claim 9, Kaish discloses wherein the label is a certificate of authenticity configured to be self-authenticated (column 9, lines 45-65) and wherein the object is an authentication object included in the certificate of authenticity (column9, lines 45-65).

19. As to claims 10, 18 and 24, Kaish discloses wherein the encoded data is included in the label as a barcode (column 27, lines 30-40).

20. As to claims 11 and 31, further comprising: determining textual data that includes a string of characters (column 11, lines 15-33, column 12, lines 50-62 and column 16, lines 25-45); hashing the textual data with an algorithm (column 11, lines 15-33, column 12, lines 50-62 and column 16, lines 25-45); encrypting the compressed data using the hashed textual data; and including the textual data in the label (abstract, column 11, lines 15-33, column 12, lines 50-62 and column 16, lines 25-45, column 13, lines 39-60).

21. As to claims 19, 20, 26 and 27, these are rejected using the same rationale as for the rejection of claim 11.

22. As to claim 12, Kaish discloses wherein the algorithm is a cryptographically secure hash algorithm (column 12, lines 50-62).

23. As to claim 14, Kaish discloses one or more computer-readable memories containing instructions that are executable by a processor (FIG. 2).

24. As to claim 21, Kaish discloses a verifier configured to decode the data representing the randomly distributed features in the label and to authenticate the label

by comparing the decoded data with the data of the actual randomly distributed features determined from the authentication object (column 27, lines 25-65 and column 28, lines 14-20).

25. As to claim 32, it is rejected using the same rationale as for the rejection of claim 21.

***Claim Rejections - 35 USC § 103***

26. Claim 13 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kaish in view of Palliyll et al. (US 2005/0131900 A1), hereinafter "Palliyll".

27. As to claim 13, Kaish doesn't explicitly disclose wherein the algorithm is an SHA1 cryptographical algorithm. However, Palliyll discloses an SHA1 cryptographical algorithm ([0051]).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention was mad to modify the teaching of Kaish by using SHA1 cryptographical algorithm as taught by Palliyll in order to provide enhance security of the encrypted data.

28. Examiner's note: Examiner has cited particular columns and line numbers in the references as applied to the claims above for the convenience of the applicant. Although the specified citations are representative of the teachings in the art and are

applied to the specific limitations within the individual claim, other passages and figures may be applied as well. It is respectfully requested from the applicant, in preparing the responses, to fully consider the references in entirety as potentially teaching all or part of the claimed invention as well as the context of the passage as taught by the prior art or disclosed by the examiner.

***Response to Amendment***

29. Applicant has amended claims 1-2, 15, 22, 28 and 30. See rejection above.

***Response to Arguments***

30. Applicant's arguments filed on 25 September 2007 have been fully considered but they are not persuasive.

31. Applicant argues that: "Kaish does not show or disclose, among other things, (1) a probability density functions and (2) basing compression in part on the probability density functions."

Examiner has carefully reviewed Applicant's argument and still maintains that: Kaish discloses probability density functions (As defined by the Applicant, "the probability density function represents the likelihood that a unit of the randomly distributed attributes is found in a certain location of the authentication object. In the context of a fiber-based certificate of authenticity, the probability density function may represent the probability that a particular point in a region of the authentication object is

illuminated" (Specification, page 12, lines 15-19); therefore, Applicant should note that Kaish teaches this concept by having "a location or particular characteristics of fibers, which are random or unique, are determined, and used to generate an encrypted code, wherein the encryption algorithm key is maintained in secrecy. Therefore, the code must match the dichroic fiber location or characteristics for authentication of the certificate." -e.g. column 12, lines 53-59, where fibers are the authentication objects that was randomly placed in a random location. See also column 12, lines 4-10, which describes that the fibers (i.e. authentication object) are randomly and non-deterministically embedded into or form a part of a subtrate; see also column 20, lines 48-55 and column 16, lines 27-37). Kaish also teaches compression in part on the probability density functions (Applicant should note that no particular type of compression method is claimed. Kaish discloses compressing of data which is later encoded and encrypted -e.g., column 28, lines 10-15. Furthermore, Kaish teaches compression by illuminating the fiber pattern by a special light -e.g., col. 27, lines 21-25).

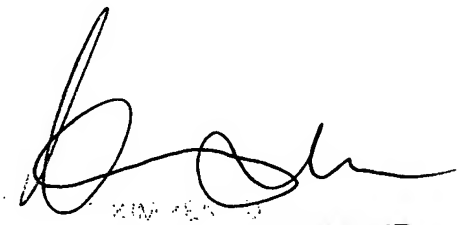
***Conclusion***

32. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Suman Debnath whose telephone number is 571 270 1256. The examiner can normally be reached on 8 am to 5 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kim Y. Vu can be reached on 571 272-3859. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/S. D./
Examiner, Art Unit 2135



SUPERVISORY PATENT EXAMINER